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AMENDMENTS TO THE CLAIMS

Please add or amend the claims to read as follows, and cancel without prejudice or disclaimer to resubmission in a divisional or continuation application claims indicated as cancelled:

<u>List of Claims</u>

1. (Currently Amended) An apparatus comprising:

a multi-algorithm detector <u>having two or more sub-detectors</u> to detect a signal according to a detection algorithm selected from two or more detection algorithms, the detector having <u>and</u> a controller to choose a mode of operation for the selection of the detection algorithm from at least a power mode of operation and a performance mode of operation, wherein the selection of the detection algorithm is based on a predetermined selection criterion associated with a chosen mode of operation,

<u>such that if the performance mode of operation is chosen, said controller is to activate at least two of said sub-detectors substantially simultaneously.</u>

2. (Canceled).

3. (Currently Amended) The apparatus of claim <u>1</u> 2 wherein said controller is to control the selection of said detection algorithm according to outputs of said sub-detectors.

4. (Previously Presented) The apparatus of claim 3 wherein said controller is to control activation of one or more of said two or more sub-detectors.

5. (Canceled).

6. (Currently Amended) The apparatus of claim <u>1</u> [[4]] wherein if a power mode of operation is selected <u>chosen</u>, said controller is to activate only one of said two or more sub-detectors or sequentially activate at least two of said two or more sub-detectors according to a preset sequence.

7. (Original) The apparatus of claim 3 wherein said controller comprises a calculator to calculate a quality metric corresponding to one or more of said sub-detectors.

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8. (Original) The apparatus of claim 7 wherein said quality metric comprises a quality metric selected from the group consisting of a signal to noise ratio, a log likelihood ratio, and a mean square error.

9. (Original) The apparatus of claim 7 wherein said controller comprises a max-detector to detect a highest quality metric of two or more quality metrics corresponding to two or more of said sub-detectors, respectively.

10. (Previously Presented) The apparatus of claim 1 wherein the predetermined selection criterion associated with the power mode of operation relates to a preset minimum quality value.

11. (Previously Presented) The apparatus of claim 1 wherein the predetermined selection criterion associated with the performance mode of operation relates to a highest quality metric of two or more quality metrics corresponding to said detection algorithms.

12. (Original) The apparatus of claim 1 wherein one or more of said detection algorithms comprises a minimum mean square error algorithm.

13. (Original) The apparatus of claim 1 wherein one or more of said detection algorithms comprises a maximal likelihood sequence estimation algorithm.

14. (Currently Amended) A wireless communications device comprising:

two or more antennas to receive a signal;

a multi-algorithm detector having two or more sub-detectors to detect the signal according to a detection algorithm selected from two or more detection algorithms, the detector having and a controller to choose a mode of operation for the selection of the detection algorithm from at least a power mode of operation and a performance mode of operation, wherein the selection of the detection algorithm is based on a predetermined selection criterion associated with a chosen mode of operation,

such that if the performance mode of operation is chosen, said controller is to activate at least two of said sub-detectors substantially simultaneously.

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15. **(Canceled).**

16. **(Currently Amended)** The device of claim __14__ [[15]] wherein said controller is to control the selection of said detection algorithm according to outputs of said sub-detectors.

17. (Original) The device of claim 16 wherein said controller comprises a calculator to calculate a quality metric corresponding to one or more of said sub-detectors.

18. (Original) The device of claim 17 wherein said quality metric comprises a quality metric selected from the group consisting of a signal to noise ratio, a log likelihood ratio, and a mean square error.

19. (Original) The device of claim 17 wherein said controller comprises a max-detector to detect a highest quality metric of two or more quality metrics corresponding to two or more of said sub-detectors, respectively.

20. (Previously Presented) The device of claim 14 wherein the predetermined selection criterion associated with the power mode of operation relates to a preset minimum quality value.

21. (Previously Presented) The device of claim 14 wherein the predetermined selection criterion associated with the performance mode of operation relates to a highest quality metric of two or more quality metrics corresponding to said detection algorithms.

22. **(Currently Amended)** A __method for use by a detector, the method__ comprising:

    choosing a mode of operation for the selection of a signal-detection algorithm from at least a power mode of operation and a performance mode of operation; and

    selecting the signal-detection algorithm from two or more detection algorithms, wherein the selection of the detection algorithm is based on a predetermined selection criterion associated with a chosen mode of operation __such that if the performance mode of operation is chosen, at least two sub-detectors of the detector are activated substantially simultaneously.__

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23. (Previously Amended) The method of claim 22 wherein the chosen mode of operation is the performance mode of operation and the method comprises:

    calculating two or more quality metrics corresponding to said two or more signal-detection algorithms, respectively; and

    selecting from the two or more signal-detection algorithms a signal-detection algorithm corresponding to a highest quality metric of said calculated metrics.

24. (Previously Amended) The method of claim 22 wherein the chosen mode of operation is the power mode of operation and the method comprises:

    calculating according to a predetermined sequence a first quality metric corresponding to a first signal-detection algorithm of said two or more signal-detection algorithms;

    selecting the first signal-detection algorithm if the first quality metric has a value higher than a preset minimum-quality value;

    calculating according to the predetermined sequence a second quality metric corresponding to a second signal-detection algorithm of said two or more signal-detection algorithms, if the first quality metric has a value lower than the preset minimum-quality value; and

    selecting the second signal-detection algorithm if the second quality metric has a value higher than the preset minimum-quality value.

25. (Currently Amended) An article comprising a computer-storage medium having stored thereon instructions that, when executed by a processing platform, result in:

    choosing a mode of operation for the selection of a signal-detection algorithm from at least a power mode of operation and a performance mode of operation; and

    selecting the signal-detection algorithm from two or more detection algorithms, wherein the selection of the detection algorithm is based on a predetermined selection criterion associated with a chosen mode of operation such that if the performance mode of operation is chosen, at least two sub-

detectors of a detector implementing the detection algorithms are activated substantially simultaneously.

26. (Previously Presented) The article of claim 25 wherein when the chosen mode of operation is the performance mode of operation the instructions further result in:

calculating two or more quality metrics corresponding to said two or more signal-detection algorithms, respectively; and

selecting from the two or more signal-detection algorithms a signal-detection algorithm corresponding to a highest quality metric of said calculated metrics.

27. (Currently Amended) The article of claim 25 wherein when the chosen mode of operation is the ~~performance~~ power mode of operation the instructions further result in:

calculating according to a predetermined sequence a first quality metric corresponding to a first signal-detection algorithm of said two or more signal-detection algorithms;

selecting the first signal-detection algorithm if the first quality metric has a value higher than a preset minimum-quality value;

calculating according to the predetermined sequence a second quality metric corresponding to a second signal-detection algorithm of said two or more signal-detection algorithms, if the first quality metric has a value lower than the preset minimum-quality value; and

selecting the second signal-detection algorithm if the second quality metric has a value higher than the preset minimum-quality value.

28. (Currently Amended) A communication system comprising:

a first communication device to transmit a signal through a communication channel; and

a second communication device to receive said signal, said second communication device comprising a multi-algorithm detector having two or more sub-detectors to detect the signal according to a detection algorithm

selected from two or more detection algorithms, ~~the detector having~~ <u>and</u> a controller to choose a mode of operation for the selection of the detection algorithm from at least a power mode of operation and a performance mode of operation, wherein the selection of the detection algorithm is based on a predetermined selection criterion associated with a chosen mode of operation,

<u>such that if a performance mode of operation is chosen, said controller is to activate at least two of said sub-detectors substantially simultaneously.</u>

29. (Canceled).

30. (Currently Amended) The system of claim ~~28~~ [[29]] wherein said controller is to control the selection of said detection algorithm according to outputs of said sub-detectors.

31. (Previously Amended) The system of claim 30 wherein said controller is to control activation of one or more of said two or more sub-detectors.

32. (Original) The system of claim 30 wherein said controller comprises a calculator to calculate a quality metric corresponding to one or more of said sub-detectors.

33. (Original) The system of claim 32 wherein said quality metric comprises a quality metric selected from the group consisting of a signal to noise ratio, a log likelihood ratio, and a mean square error.

34. (Original) The system of claim 32 wherein said controller comprises a max-detector to detect a highest quality metric of two or more quality metrics corresponding to two or more of said sub-detectors, respectively.

35. (Original) The system of claim 28 wherein one or more of said detection algorithms comprises a minimum mean square error algorithm.

36. (Original) The system of claim 28 wherein one or more of said detection algorithms comprises a maximal likelihood sequence estimation algorithm.